

## FEATURES

- **4000mAh capacity:** Provides extended usage time for devices, reducing the need for frequent recharging.
- **NiMH chemistry:** Offers a stable and efficient power source, enhancing device performance.
- **18670 size:** Compatible with a wide range of devices, ensuring versatility.
- **Wide operating temperature range:** Functions effectively from -20°C to 70°C, suitable for diverse environments.
- **Wire termination:** Allows for easy and secure connections in various applications.
- **Compliance with standards:** Meets ANSI-ESD S20.20:2021, ATEX-IECEX, RoHS, and VDE standards, ensuring safety and reliability.

## RS PRO 4000mAh Rechargeable Battery, 18670 NiMH

RS Stock No: 677-109



RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

### Product Description

This RS PRO rechargeable battery is designed for high-performance applications requiring reliable power. With a capacity of 4000mAh, it is ideal for use in demanding environments where long-lasting energy is crucial. Its NiMH chemistry ensures a stable and efficient power supply, making it suitable for various industrial and commercial uses.

### General Specifications

Battery Size	18670
Chemistry	NiMH
Product Type	Rechargeable Battery
Termination Type	Wire

### Electrical Specifications

Battery Capacity	4000 mAh
Nominal Voltage	3.6 V

### Mechanical Specifications

Diameter	19 mm
Height	201 mm
Weight	183.4 g

### Operation Environment Specifications

Maximum Operating Temperature	70 °C
Minimum Operating Temperature	-20 °C

### Approvals

Standards/Approvals	ANSI-ESD S20.20:2021, ATEX-IECEx, RoHS, VDE
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## Characteristics

### Terminal Voltage

Open circuit voltage (O.C.V.) shall be 3.4 V (minimum) within two weeks at room temperature after full charge.

### Capacity

The battery deliver 4000mAh capacity at 0.1CmA charge rate for 16 hrs, then 0.2CmA discharge rate to 3.0 V. And the capacity of the battery is over 3800mAh at 0.2CmA discharge. The actual capacity depends on the operating temperature and the cycling conditions.

### Cycle-life

The battery pack is capable of 500 cycles under the following conditions:

50 cycles test as per above table is repeated. The discharge time of the 100th, 200th, 300th, 400th, 500th should be more than 3 hours respectively. After 500 cycles, the capacity is still over 80% of rated capacity. The actual cycle life depends on the operating temperature and the cycling conditions.

### Overcharge

1. The battery is charged at 0.5 CmA for 3 hours. After charging, the battery shows no change in the cell appearance, no leakage, and no fire or explosion.
2. The battery is charged at less than 0.03 CmA for a long term (over one month). After charging, the battery shows no change in the cell appearance, no leakage, and no fire or explosion.

### Short Test

The battery is fully charged, then shorted by connecting the positive to the negative terminals. The battery discharging is cut off by the fuse. The battery has no leakage observed, no change in the battery appearance, and no fire or explosion.

Cycle number	Charge	Rest	Discharge
1	0.10CmA for 16 hrs	0.5hr	0.25CmA for 2 hrs 20 min
2~48	0.25CmA for 3 hrs 10 min	0.5hr	0.25CmA for 2 hrs 20 min
49	0.25CmA for 3 hrs 10 min	0.5hr	0.25CmA to 1.0V/cell
50	0.10CmA for 16 hrs	1.0hr	0.20CmA to 1.0V/cell

**Characteristics (Cont.)****Self Discharge**

1. After one-month storage of a fully charged battery at room temperature (25°C), the capacity of battery has 70% of rated capacity, 0.2 CmA discharge to 3.0 V.
2. After one-week storage of a fully charged battery at 45°C, the capacity of battery has 70% of rated capacity, 0.2 CmA discharge to 3.0 V.

**Welding strength of the nickel terminals**

Welding strength of nickel terminals is tested in perpendicular direction. The welding strengths are over 1 kgf.

**Vibration Test**

Cells are tested as follows:

1. Amplitude: 3.6mm peak to peak
2. Frequency: 100Hz
3. Direction and time: Arbitrary direction continuously for 1 hour.
4. Performance: The cell shall be normality in appearance and no leakage.

**Shock Test**

Cells are tested as follows:

1. Dropping Distance: 0.65m (spontaneous dropping)
2. Floor material: Made of hard wood (Thickness is over 10mm)
3. Dropping Time: Arbitrary direction for 3 times.
4. Performance: The cell shall be normality in appearance and no leakage.





